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New distributional record of marine bivalve, *Hiatula diphos* (Linnaeus, 1771) (Bivalvia: Cardiida: Psammobiidae) from the Andaman Islands, India

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Abstract

The present study reports a new distributional record of the marine bivalvia *Hiatual diphos* (Linnaeus, 1771) from the Andaman Islands. The material examination, species diagnosis and distributions, illustrations of species are provided in this paper.

Keywords: Andaman Islands, *Hiatula*, Mollusca, New Record, Sea Shell

Introduction

Bivalves are one of the most important components in benthic fauna. They are Mollusca group animals with a laterally compressed body enclosed by two hinged parts of calcareous shell segments (Bouchet, 2010; de Kluijver *et al.,* 2018). They are exclusively aquatic and cannot be seen on land forms. The bivalve shells have developed a propensity of attaching to hard substrates and digging in sandy and muddy substrates due to the nature of their bodies (Ramakrishna and Dey, 2010). They play an important role in both freshwater and marine benthic habitats (Tripathy, 2013) and exhibit tenacious life in the intertidal zone (Ramakrishna and Dey, 2010). There are about 15000 bivalve species are described from the world while Indian represented with 900 species, out of these maximum 750 species found in marine forms and only few species found in fresh water forms (Subba Rao, 2017)

Members of the family Psammobiidae are undeniably Bivalvian and are commonly referred to as sunset shells (Willan, 1993). The following are their general characteristics: Shell is fragile, elongate, equivalve, and compressed; anterior end is rounded; margins are smooth; umbones are roughly central; valves have slight gapes (especially at the posterior end), but no posterior flexure; sculpture of concentric or radial cords and growth striae; Long, external ligament seated on elevated nymph; two cardinal teeth in each valve (posterior one can be greatly reduced in left valve); lateral teeth absent; two cardinal teeth in each valve (posterior one can be greatly reduced in left valve); the pallial sinus (Willan, 1993). In the Andaman and Nicobar Islands, the family Psammobiidae represented by only five species of *Gari* such as *Gari elongata* (Lamarck, 1818), *G. maculosa* (Lamarck, 1818), *G. pallida* (Deshayes, 1855), *G. anomala* (Deshayes, 1855) and *G. pulcherrima* (Deshayes, 1855) from Andaman and Nicobar Islands (Mondal, 2018). It is very important note that the genus *Hiatula* has no representatives in the Islands, hitherto. The present paper provides occurrence of a new distributional record of *Hiatula diphos* (Linnaeus, 1771) to the Andaman Islands.

Material and Methods

Specimens were collected from intertidal region of Kalipur region, North and Middle Andaman Islands by hand picking method (Figure 1). Occurrence of the species is mapped using Arc GIS 10.4.1 version. Photographs of species were taken by using Canon PowerShot G15. Collected specimen were cleaned, photographed and identified by using available literature (Abbott and Dance, 2000; Ramakrishna and Dey, 2010).

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The species names have been validated in the WoRMS database for valid classification (Molluscabase, 2020). On completion of the taxonomical study, the specimen was deposited in National Zoological Collections of Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair.

Results

Phylum MOLLUSCA Linnaeus, 1758
Class BIVALVIA Linnaeus, 1758
Order CARDIIDA Ferussac, 1822
Super Family TELLINOIDEA Blainville, 1814
Family PSAMMOBIIDAE J. Fleming, 1828
Genus ***Hiatula*** Modeer, 1793

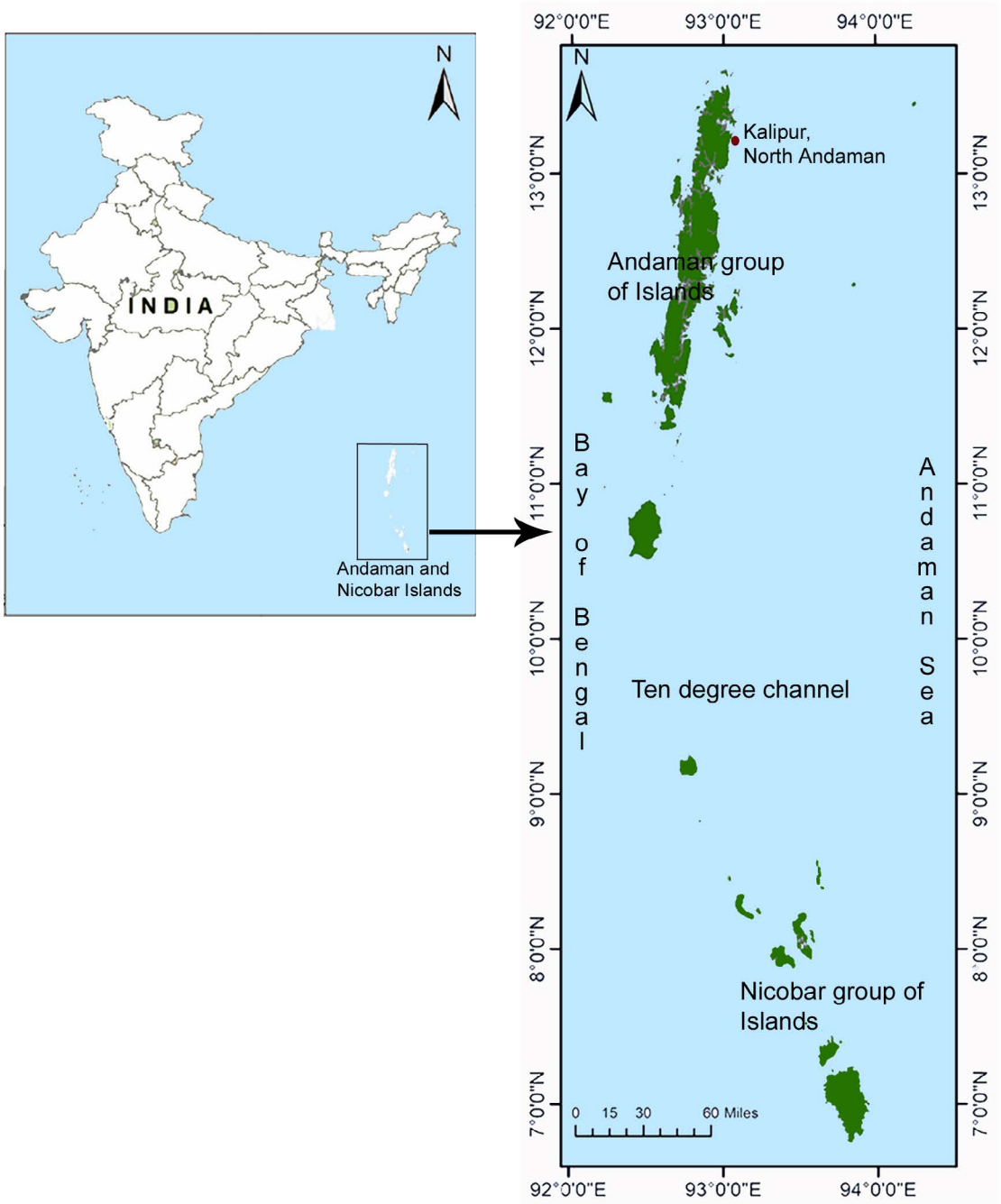

Figure 1. Map showing the study area, Kalipur, North Andaman.

Hiatula diphos (Linnaeus, 1771)

1771. *Solen diphos* Linnaeus, *Mantissa Planatarum,* **2**: 544. Type locality: India

1857. *Soletellina acuminata* Reeves, *Conch. Icon.,* **10**: *Soletellina*, Sp. No., 12, pt. 3, Figure 12.

1906. *Soletellina diphos* Comber, *J. Bombay nat Hist. Soc.,* **17**: 214.

1991. *Sanguinolaria (Soletellina) diphos*: Subba Rao, Surya Rao and Maitra, *Fauna of Orissa, State Fauna Series*, **1**(3): 142. Zool. Surv. India.

2007. *Sanguinolaria diphos* Arularasan and Kasinathan, *Zoos. Print. J.,* **22**(1): 2564.

2010. *Sanguinolaria (Soletellina) diphos* Ramakrishna and Dey. *Annotated checklist of Indian Marine Molluscs, Rec. Zool. Surv. India.* **320**: 1-357.

Material examined: 1 example (2 valves), India, Andaman and Nicobar Islands, Dist. North Andaman, Kalipur, Lat. 13°13.439'N; Long. 93°02.700'E, ZSI/ANRC/M-25478, 27.v.2018, coll. S. Rajendra.

Color: Bluish purple in color.

Measurements: Length-39 mm; width-21 mm

Distribution: India: East coast, west coast of India (Ramkrishna and Dey, 2010) and Andaman Islands (Present study); *Elsewhere*: Pakistan, Bangladesh, Sri Lanka, Moluccas, Myanmar, Malaysia, Philippines, China and Japan (Ramakrishna and Dey, 2010).

Remarks: Shell moderate, compressed, equivalve; shell surface purple colored with paler concentric zones and two whitish radial rays and concentric growth lines covered by strong dark periostracum; muscle scars well developed at anterior end whereas posterior end acuminates with obtuse; angle gap on posterior end broad; posterior end narrower than anterior (Figure 1 a,b). This species earlier recorded as *Sanguinolaria (Soletellina) acuminata* and *Sanguinolaria (Soletellina) diphos* from coasts of mainland India.

Habitat: The present specimen found on sandy, muddy intertidal region of Kalipur, North Andaman.

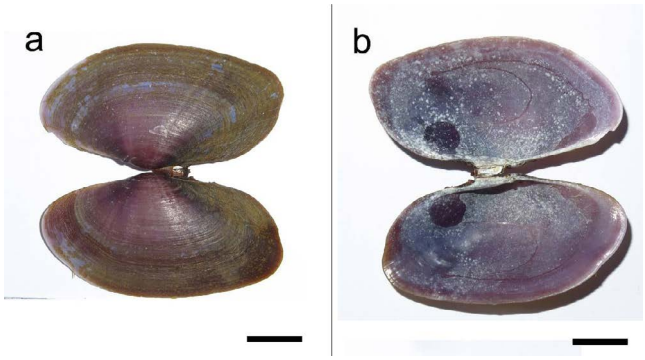

Figure 2. **(a, b)** *Hiatula diphos* (Linnaeus, 1771) exterior view and interior view respectively (scale bar-10 mm)

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